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AUTHOR Quick, Alida D.; Crano, William D.
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ABSTRACT

Empirical evidence indicates that intrusions into an individual's personal space may produce anxiety and defensive or avoidance behaviors which might be reduced when conversation occurs between interactants. This paper briefly presents two field experiments designed to investigate this possibility. The first study hypothesized that invasion of space would incur more rapid defensive reactions when the invader (experimenter) and subject were the same sex. Analyses disclosed that both distance and sex of invader had significant impact; an unexpected finding was that female experiments elicited more rapid defensive reactions than males. A second study incorporated distance, sex and presence or absence of a verbalized remark ("hello"). Analysis indicated that sex of the invader and verbalized communication influenced subject reactions in the direction of defense or avoidance. Females again brought about more threatened feelings on the part of subjects. It is posited that uninvited advances by female invaders are perceived as manifestations of aggression, and therefore more threatening to males; another possibility is that female experimenters, recognizing a role conflict in their portrayal, reflect anxiety which stimulates rapid defenses. To test these hypotheses, a third study has been designed to incorporate not only distance and sex but also anxiety levels of invaders. (Author/CJ)

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Alida D. Quick and William D. Crano

Michigan State University

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EFFECTS OF SEX, DISTANCE, AND CONVERSATION IN THE INVASION OF PERSONAL SPACE*

Alida D. Quick and William D. Crano

Michigan State University

Personal space generally refers to an invisible individual boundary surrounding a person's body into which others may not trespass (Sommer, 1966). Empirical evidence indicates that intrusions into an individual's personal space may produce considerable anxiety, which is usually associated with defensive and avoidance behaviors (Felipe and Sommer, 1966; McBride, King, & James, 1965; Sommer, 1969).

Though largely regulated by cultural determinants (Baxter, 1970; Hall, 1966; Little, 1968), personal space expands and contracts in compliance with certain personality dispositions (Leipold, 1963; Patterson and Holmes, 1966) and situational factors (Sommer, 1969). Among the determinants of personal space, sex differences have received perhaps the most one-sided attention. The approach has been unilateral in the sense that there is an overemphasis on projective techniques, imaginary interactions, and visual rather than physical invasions. In view of the recent emphasis on naturalistic studies in spatial research (Kleinke, 1972; Sommer, 1969) it is also interesting to note that most of the studies dealing with sex differences occur in laboratory settings.

The inadvertent use of verbal inputs in spatial invasion studies is also a questionable practice which has received negligible consideration. It has generally been assumed that studies employing conversation between interactants and those which do not are comparable to a large degree. The salience of an invasion might, however, be considerably reduced when conversation occurs between interactants. It is reasonable

to expect that a verbal exchange would serve to "buffer" the potentially threatening experience of close physical proximity between individuals.

With these considerations in mind a series of field experiments were conducted. These studies, while sharing the advantages of ready generalizability, were designed to approximate the control of the typical laboratory investigation. The first experiment in this series was initially viewed as little more than a training exercise, although later developments have altered these conceptions.

In this study the procedure called for an experimental confederate to invade the personal space of an individual sitting alone at a four-person table in the university library. It was hypothesized that more rapid defensive reactions to the invasion would be more likely to occur when the invader and subject were of the same sex. The distance between the invader and the subject was also expected to affect reaction time. An invader in very close proximity to a subject was expected to induce a more rapid response than an invader in more distant positions.

There were 25 confederate invaders (9 females and 16 males) and 150 subjects (75 of each sex). Each confederate was instructed to invade three male and three female subjects from each of three designated seating distances: at the near position the confederate sat directly adjacent to the subject (a maximum of one foot separated the interactants); at the intermediate position the confederate sat immediately across from the subject (three foot separation); at the far position the confederate sat diagonally across from the subject (five foot separation).

The time at which an uninformed observer noted the first defensive reaction (barrier building, turning away from the invader, flight, etc.) constituted the dependent measure. The factorial combination of sex of subject, sex of confederate, and distance was studied in a three-way

analysis of variance. Since the nested effect of confederates within sex was not significant, specific confederate by treatment effects were pooled as error.

The analysis disclosed that both distance ($F=6.71$, $df=2/138$, $p < .01$) and sex of confederate ($F=4.40$, $df=1/138$, $p < .05$) had a significant impact on subjects' responses. As expected, confederates in the most proximal condition elicited the most rapid responses. The main effect for sex of confederate disclosed the rather unexpected finding that female confederates elicited more rapid defensive reactions than males.

This unexpected result in combination with a number of irrelevant, but potentially reactive features of the experiment (e.g., the study was run during the week preceding midterm examinations and the subjects might have been very resistant to flight from the library, etc.) stimulated another investigation. In this second study, a field experiment was conducted during the summer at the university's outdoor swimming pool where 48 unaware subjects (24 of each sex) were in aded for a maximum of five minutes. The subjects were individuals sitting alone in the pool area with at least six feet of unobstructed space surrounding them.

The variables of sex of subject, sex of confederate, and the presence or absence of an introductory remark on the part of the confederate were investigated. Two invasion approaches were utilized in order to manipulate the conversation variable. Upon establishing a distance of less than one foot between himself and a subject, the invader would either initiate conversation with the subject by saying "Hello" (verbal condition) or remain silent (nonverbal condition).

There were six confederate invaders (three of each sex). Each invaded four male and four female subjects (two of each in the verbal and nonverbal conditions). The subject's response to the invader constituted

the dependent measure, and was assessed by an unobtrusive observer. If the subject leaned toward the invader, attempted to initiate conversation, or otherwise indicated some positive gesture (e.g., smiling, moving closer, etc.), the reaction was scored as positive, and assigned a score of +3. If the subject turned away from the invader, left the area, or provided some other form of negative verbal or physical response, it was scored at negative (+1). When the subject did not elicit any response to the invader a neutral (+2) score was recorded.

Since the nested effect of confederates within sex was not significant, the analysis of subjects' reaction scores was reduced to a three-way factorial analysis of variance. The analysis disclosed that the sex of the invader ($F=4.35$, $df=1/40$, $p < .05$) and the conversation manipulation ($F=15.80$, $df=1/40$, $p < .01$) significantly influenced subjects' reactions to spatial invasion.

As predicted, the threat of the invasion was appreciably attenuated when the invader initiated conversation. This finding was interesting in that the confederate's initial conversational gambit was limited to the word "Hello". This result might be viewed as an example of simple "priming". That is, once the invader initiated conversation, his actions were seen as inviting a response.

It is also conceivable that the communication served to reduce subjects' perceptions of the invader as gratuitously intrusive or threatening. The verbal cue might have been perceived as a deferential gesture indicating the invader's acknowledgement of the subject as a person, and acknowledgement of the intrusion. Invasions where the verbal cue was not included were perhaps less tolerable because of the invader's ostensible insensitivity toward the subject, and apparent failure to recognize him as a person.

The direction of response differences indicated by the significant sex of invader effect replicated that of the first experiment. Women invaders in this field situation evoked a greater degree of negative response than male invaders. In attempting to come to grips with these replicated results, we have focused on two plausible explanations. The first is based on normative considerations and proposes that in this society, as presently constituted, it is counternormative for women to invade the space of others. This proposition is based on the premise that the uninvited advances of female invaders were perceived as manifestations of aggression (which is in direct opposition to the more passive role culturally ascribed to females). If such is the case, invasions by women might be viewed as more threatening, and hence more conducive to the stimulation of rapid defensive responses.

The other possibility concerns the confederate's acknowledgement of the counternormative nature of the invasion. If female confederates recognized the rather strong prohibitions against their invasive actions, they might have been appreciably more anxious about their role than the male invaders, for whom the experimental task was perhaps not so reactive. The heightened anxiety on the part of the female confederates might have been "contagious", and hence resulted in the findings which were obtained.

To test the plausibility of these hypotheses, a third experiment has been designed, in which male and female actors, feigning either high or low anxiety, invade the personal space of naive subjects. The results derived in this experiment will hopefully provide some indication of the reasons underlying the sex effects obtained in the previous studies.

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